

THIS OPINION WAS NOT WRITTEN FOR PUBLICATION

The opinion in support of the decision being entered today
(1) was not written for publication in a law journal and
(2) is not binding precedent of the Board.

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte TIMOTHY A. WELLMAN,
NED E. DAMMEYER and
WALTER CONLEY, III

Appeal No. 96-0949
Application 08/236,091¹

ON BRIEF

Before THOMAS, HAIRSTON and LALL, Administrative Patent
Judges.

THOMAS, Administrative Patent Judge.

DECISION ON APPEAL

Appellants have appealed to the Board from the examiner's
final rejection of claims 21 through 30. Because pages 1, 5

¹ Application for patent filed May 2, 1994. According to appellants,
this application is a division of Application 07/682,284, filed April 9, 1991,
now U.S. Patent No. 5,343,145, issued August 30, 1994.

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and 7 of the examiner's answer indicate that the examiner has withdrawn the rejection as to claims 22 through 25 and 27 through 29, only claims 21, 26 and 30 remain on appeal for decision.

Representative claim 26 is reproduced below:

26. In an operator controlled wire guided materials handling vehicle including means for guiding the vehicle along a predetermined path defined by a buried wire and means for moving said vehicle, the improvement including:

at least one magnet sensor mounted on said vehicle for detecting a magnetic field emanating from a buried magnet, which indicates a specific location along the path of the vehicle;

circuit means for providing an analog signal representing the strength of the magnetic field detected by said magnet sensor as the vehicle moves along said path;

threshold detecting means for providing a threshold output signal when the analog output of said magnet sensor is above a predetermined magnitude;

means responsive to said threshold output signal for detecting and holding a peak analog output of said magnet sensor during the time a threshold output signal is present;

means for comparing said peak analog output to a second predetermined value; and

means for indicating a first fault condition when said peak analog output is below said second predetermined value.

The following references are relied on by the examiner:

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Van Husen	4,514,687	Apr. 30,
1985		
Swenson	4,613,804	Sep. 23, 1986
Laib	4,714,124	Dec. 22,
1987		

Claims 21, 26 and 30 stand rejected under 35 U.S.C. §
103. As evidence of obviousness, the examiner relies upon
Laib in view of Swenson and Van Husen.

Rather than repeat the positions of the appellants and
the examiner, reference is made to the briefs and the answer
for the respective details thereof.

OPINION

At the outset, we note that the subject matter of the
parent application to this application was the subject of an
earlier appeal, Appeal No. 93-2239, in which a decision was
rendered on August 13, 1993, and in which a rejection under 35
U.S.C. § 103 of certain claims on appeal was affirmed.

We reverse the stated rejection of the claims on appeal
herein under 35 U.S.C. § 103.

Laib clearly relates to the disclosed and claimed
invention, including substantially the preamble of
representative claim 26, the magnetic sensor limitation, a

circuit means for providing an analog signal representing the strength of the magnetic field as well as threshold detecting means for providing a threshold output signal when the analog output of the sensor is above a predetermined magnitude. All of these features have not been asserted to be taught by this reference by the examiner. Laib's overall purpose is to guide the vehicle along a predetermined path determined by the buried cable 18 within the slot 16 by use of the vehicle controller 12 sensing relative vehicle position through Hall effect sensors 28, 30 and 54, 56 in Figures 1 and 2. These sensors sense the magnetic fields of the buried permanent magnets 24, 25 in these figures. The sensors are of the nature to sense field strength of the magnets buried in the floor.

The discussion of Figures 3 and 4 of Laib, beginning at column 5, line 50 through the end of the disclosure indicate that the Hall effect magnetic field strength sensors are utilized to ensure that the vehicle of the overall system is centered along the travel path and travels in close proximity to the buried magnets with minor deviations. At least with respect to Figure 4, the analog signals derived from the Hall

effect sensors are processed by the operational amplifier 40 and fed to the comparator circuits 44 and 50 each of which have threshold values set by the resistor network including resistors 48 and 52 which set the threshold level for the comparators 44 and 50. The discussion at column 6 tracks with the structure and functional features recited in the early portion of representative claim 26 on appeal.

On the other hand, we agree with appellants' basic assertion that there would have been no persuasive basis in the art from the artisan's perspective to combine the teachings of Swenson with Laib to arrive at the claimed invention. Swenson is not directed to a buried magnetic floor position sensing system for an unmanned vehicle to track locations, but instead utilizes metallic markers as benchmarks analogous to buried magnets as in Laib. The discussion at column 4 beginning at line 58 and column 5, line 56, indicates that there is some suggestibility to the artisan that magnetic materials may become magnetized in the manner consistent with the buried magnets in the floor in Laib. The examiner appears to be relying on Swenson for the ability of the vehicle 12 sensor 10 as generally depicted in Figure 7 to

sense the various magnitudes of magnetic fields associated with secondary pickup coils 20 best depicted in Figure 2.

However,

it appears to us that the peak detectors and sample and hold circuits elements in Figure 7 are utilized for the purpose of excluding extraneous magnetic fields since there are multiple magnetic fields taught and involved in the guidance system of Swenson.

Even though we recognize that Swenson appears to contain analogous teachings to those in Laib, we are not convinced the artisan would have found it obvious to have combined the Swenson teachings of the noted figures with those in Laib at least because it appears to us that the accuracy that may have been derived from the system of Swenson and would not necessarily have enhanced the given accuracy for the Laib system as a whole. We are unconvinced by the examiner's rationale of combinability and can surmise none of our own from our understanding and study of the collective teachings of both references. The teachings of Laib and Swenson may or could have been combinable, but from an artisan's perspective,

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we can find no reason that it would have been obvious to do so within 35 U.S.C. § 103.

In view of these findings, we are left without a teaching reference to meet the limitations of representative independent claim 26 on appeal providing a means for detecting and holding the peak analog output signals of the magnetic sensor during a time a threshold output signal is present and, in addition, the subsequent comparing of this peak analog signal to a second predetermined value as both required by both independent claims on appeal. None of the other two references relied upon teaches this feature. Van Husen would have been desirably combinable with the system of Laib since Van Husen teaches testing Hall effect devices which are specifically utilized in the Laib system. However, Van Husen fails to teach or suggest the noted detection and holding of peak analog signals and their comparison to a second predetermined value.

Therefore, in view of the foregoing, the decision of the examiner rejecting representative independent claim 26 on appeal is reversed. Since the subject matter of independent claim 21 tracks that of claim 26, the rejection of this claim

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is also reversed. It therefore follows that we cannot sustain
the rejection of dependent claim 30.

The decision of the examiner is reversed.

REVERSED

	JAMES D. THOMAS)	
	Administrative Patent Judge)	
)	
)	
	KENNETH W. HAIRSTON)	BOARD OF
PATENT	Administrative Patent Judge)	APPEALS AND
)	INTERFERENCES
)	
	PARSHOTAM S. LALL)	
	Administrative Patent Judge)	

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